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10/739,351	12/19/2003	Toshiki Takahashi	246770US-2 CIP	1084
22850	7590	03/21/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LUND, JEFFRIE ROBERT	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/739,351

Applicant(s)

TAKAHASHI ET AL.

Examiner

Jeffrie R. Lund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 1-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group III in the reply filed on December 29, 2005 is acknowledged. The traversal is on the ground(s) that there is no serious burden to search multiple classifications because of electronic searching. This is not found persuasive because although electronic searching does allow searching of large numbers of patents, the more references searched, the more time required to make the search, which is a serious burden. Furthermore, since the apparatus are different, different art must be used to reject the different claims. This requires the simultaneous examination of three different apparatus claims, which is a serious burden.

The requirement is still deemed proper and is therefore made FINAL.

### ***Priority***

2. The Examiner has reviewed the claim for priority and determined that the embodiment of the present invention was added in the present application. Therefore, the case will be examined based on the filing date of December 19, 2003 with a foreign priority date of December 19, 2002.

### ***Drawings***

3. The drawings are objected to because reference number 13 in figure 15 should read --313--. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The

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figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The abstract of the disclosure is objected to because it does not describe the claimed invention. Correction is required. See MPEP § 608.01(b).

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

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be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 36, 37, and 41 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claim of U.S. Design Patent No. D494,552 S ('552). Although the conflicting claims are not identical, they are not patentably distinct from each other because '552 shows the invention of claims 36 and 37, and it would be obvious to optimize the size of the holes as claimed in claim 41.

7. Claims 29-35 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claim of U.S. Design Patent No. D494,552 S ('552) in view of Koshiishi et al, US Patent 5,919,332, Herchen et al, US Patent 6,264,852 B1, Ishii JP 2001-093699, and Loewenhardt et al, US Patent 6,030,486. '552 shows an exhaust ring with three exhaust holes with increasing areas from the inner side to the outer side. '552 does not teach that the exhaust ring is part of a plasma etching apparatus with a plasma etching chamber, susceptor, and exhaust mechanism; that the thickness of the exhaust ring varies with the varying area of the holes; a plurality of magnets arranged around the periphery of the exhaust ring; or the size of the openings. Koshiishi et al teaches a plasma etching apparatus that includes a plasma etching chamber 3, a susceptor 6, an exhaust ring 43, and an exhaust mechanism 41 (figure 1). Herchen et al teaches varying the thickness of a baffle plate 35 to control the temperature of the baffle plate (figure 4a). Ishii teaches using a plurality of magnets around the periphery of the exhaust ring to prevent plasma leaking (abstract

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and figures). Loewenhardt et al teaches using a combination of magnets 60, 62 and an exhaust ring 96 to prevent the plasma from leaking through the exhaust ring. (Figures 7 and 8) The motivation for using the exhaust ring of '552 in a plasma etching apparatus is to enable the use of the exhaust ring for its designed purpose. The motivation for varying the thickness of the exhaust ring of '552 is to control the temperature of the exhaust ring as taught by Herchen et al. The motivation for adding magnets of Ishii to the exhaust ring of '552 is to prevent plasma from leaking through the exhaust ring as taught by Loewenhardt et al. The motivation for selecting a specific size of the holes is to optimize the flow of gas through the exhaust ring. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the exhaust ring of '552 in a plasma etching apparatus as taught by Koshiishi et al, vary the thickness as taught by Herchen et al, to add a plurality of magnets as taught by Ishii, and optimize the size of the holes.

8. Claim 38 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claim of U.S. Design Patent No. D494,552 S ('552) in view of Herchen et al, US Patent 6,264,852 B1. '552 shows an exhaust ring with three exhaust holes with increasing areas from the inner side to the outer side. '552 does not teach that the thickness of the exhaust ring varies with the varying area of the holes. Herchen et al teaches varying the thickness of a baffle plate 35 to control the temperature of the baffle plate (figure 4a). The motivation for varying the thickness of the exhaust ring of '552 is to control the temperature of the exhaust ring as taught by Herchen et al. Therefore, it would have been obvious to one of ordinary skill in the art at

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the time the invention was made to vary the thickness as taught by Herchen et al.

9. Claims 39 and 40 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claim of U.S. Design Patent No. D494,552 S ('552) in view of Ishii, JP 2001-093699 and Loewenhardt et al, US Patent 6,030,486. '552 shows an exhaust ring with three exhaust holes with increasing areas from the inner side to the outer side. '552 does not teach a plurality of magnets arranged around the periphery of the exhaust ring. Ishii teaches using a plurality of magnets around the periphery of the exhaust ring to prevent plasma leaking (abstract and figures). Loewenhardt et al teaches the use of magnets 60, 62 with an exhaust ring 96 to prevent the plasma from leaking through the exhaust ring (figures 6 and 7). The motivation for adding magnets of Ishii to the exhaust ring of '552 is to prevent plasma from leaking through the exhaust ring as taught by Loewenhardt et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a plurality of magnets as taught by Ishii and Loewenhardt et al.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 36 and 37 are rejected under 35 U.S.C. 102(e) as being clearly

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anticipated by Tezuka et al, US Design Patent D494,552 S.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Tezuka et al teaches the claimed exhaust ring in the figures.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tezuka et al, in view of Koshiishi et al, US Patent 5,919,332, Herchen et al, US Patent 6,264,852 B1, Ishii, JP 2001-093699, and Loewenhardt et al, US Patent 6,030,486.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome



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by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Tezuka et al teaches an exhaust ring with three exhaust holes with increasing areas from the inner side to the outer side (figures).

Tezuka et al differs from the present invention in that Tezuka et al does not teach that the exhaust ring is part of a plasma etching apparatus with a plasma etching chamber, susceptor, and exhaust mechanism; that the thickness of the exhaust ring varies with the varying area of the holes; a plurality of magnets arranged around the periphery of the exhaust ring; or the size of the openings.

Koshiishi et al teaches a plasma etching apparatus that includes a plasma etching chamber 3, a susceptor 6, an exhaust ring 43, and an exhaust mechanism 41 (figure 1).

Herchen et al teaches varying the thickness of a baffle plate 35 to control the

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temperature of the baffle plate (figure 4a).

Ishii teaches using a plurality of magnets around the periphery of the exhaust ring to prevent plasma leaking (abstract and figures).

Loewenhardt et al teaches using a combination of magnets 60, 62 and an exhaust ring 96 to prevent the plasma from leaking through the exhaust ring (Figures 7 and 8)

The motivation for using the exhaust ring of Tezuka et al in a plasma apparatus is to enable the use of the exhaust ring for its designed purpose.

The motivation for varying the thickness of the exhaust ring of Tezuka et al is to control the temperature of the exhaust ring as taught by Herchen et al.

The motivation for adding magnets of Ishii to the exhaust ring of Tezuka et al is to prevent plasma from leaking through the exhaust ring as taught by Loewenhardt et al. The motivation for selecting a specific size of the holes is to optimize the flow of gas through the exhaust ring. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP 2144.04 (d))

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the exhaust ring of Tezuka et al in a plasma etching

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apparatus as taught by Koshiishi et al, vary the thickness as taught by Herchen et al, to use a plurality of magnets as taught by Ishii and Loewenhardt et al, and to optimize the size of the holes.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

14. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tezuka et al, U.S. Design Patent No. D494,552 S, in view of Herchen et al, US Patent 6,264,852 B1.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under

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35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Tezuka et al teaches an exhaust ring with three exhaust holes with increasing areas from the inner side to the outer side.

Tezuka et al differs from the present invention in that Tezuka et al does not teach that the thickness of the exhaust ring varies with the varying area of the holes.

Herchen et al teaches varying the thickness of a baffle plate 35 to control the temperature of the baffle plate (figure 4a).

The motivation for varying the thickness of the exhaust ring of Tezuka et al is to control the temperature of the exhaust ring as taught by Herchen et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the thickness as taught by Herchen et al.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

15. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tezuka et al, U.S. Design Patent No. D494,552 S, in view of Ishii, JP 2001-093699, and Loewenhardt et al, US Patent 6,030,486.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an

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invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Tezuka et al teaches an exhaust ring with three exhaust holes with increasing areas from the inner side to the outer side.

Tezuka et al differs from the present invention in that Tezuka et al does not teach a plurality of magnets arranged around the periphery of the exhaust ring.

Ishii teaches using a plurality of magnets around the periphery of the exhaust ring to prevent plasma leaking (abstract and figures).

Loewenhardt et al teaches the use of magnets 60, 62 with an exhaust ring 96 to prevent the plasma from leaking through the exhaust ring (figures 6 and 7).

The motivation for adding magnets to the exhaust ring of Tezuka et al is to prevent plasma from leaking through the exhaust ring as taught by Loewenhardt et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a plurality of magnets as taught by Ishii and Loewenhardt et al.

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Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

16. Claims 29-31, 34-38, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiishi et al, US Patent 5,919,332, in view of Herchen et al, US Patent 6,264,852 B1.

Koshiishi et al teaches a plasma etching apparatus that includes a plasma etching chamber 3, a susceptor 6, an exhaust ring 43, and an exhaust mechanism 41 (figure 1).

Koshiishi et al differs from the present invention in that Koshiishi et al does not teach that the size of the holes and the thickness of the exhaust ring vary from the inner periphery to the outer periphery, or the size of the openings.

Herchen et al teaches increasing the size of the holes 40 from the center to the edge of the baffle plate 35 to improve the uniformity of the flow, and increasing the thickness of a baffle plate 35 to control the temperature of the baffle plate.

The motivation for varying the size of the holes in the exhaust ring of Koshiishi et al is to improve the uniformity of the flow as taught by Herchen et al.

The motivation for varying the thickness of the exhaust ring of Koshiishi et al is to control the temperature of the exhaust ring as taught by Herchen et al.

The motivation for selecting a specific size of the holes is to optimize the flow of gas through the exhaust ring. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ

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232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

(Also see MPEP 2144.04 (d))

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the size of the holes and the thickness of the exhaust ring of Koshiishi et al as taught by Herchen et al, and to optimize the size of the holes.

17. Claims 32, 33, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiishi et al and Herchen et al as applied to claims 29-31, 34-38, and 41 above, and further in view of Ishii, JP 2001-093699, and Loewenhardt et al, US Patent 6,030,486.

Koshiishi et al and Herchen et al differ from the present invention in that they do not teach a plurality of magnets arranged around the periphery of the exhaust ring.

Ishii teaches using a plurality of magnets around the periphery of the exhaust ring to prevent plasma leaking (abstract and figures).

Loewenhardt et al teaches the use of magnets 60, 62 with an exhaust ring 96 to prevent the plasma from leaking through the exhaust ring (figures 6 and 7).

The motivation for adding magnets to the exhaust ring of Koshiishi et al and Herchen et al is to prevent plasma from leaking through the exhaust ring as taught by Loewenhardt et al.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a plurality of magnets to the apparatus of Koshiishi et al and Herchen et al as taught by Ishii and Loewenhardt et al.

18. Claims 32, 33, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiishi et al and Herchen et al as applied to claims 29-31, 34-38, and 41 above, and further in view of Hirose et al, JP 2003-124192.

Koshiishi et al and Herchen et al differ from the present invention in that they do not teach a plurality of magnets arranged around the periphery of the exhaust ring.

Hirose et al teaches using a plurality of magnets 200 around the periphery of the exhaust ring 7 to prevent plasma leaking (Abstract and figures).

The motivation for adding magnets to the exhaust ring of Koshiishi et al and Herchen et al is to prevent plasma from leaking through the exhaust ring as taught by Hirose et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a plurality of magnets to the apparatus of Koshiishi et al and Herchen et al as taught by Hirose et al.

### ***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-



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1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund  
Primary Examiner  
Art Unit 1763

JRL  
3/17/06